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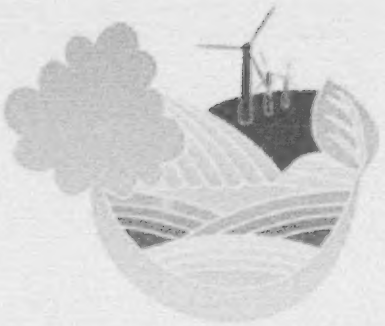
Canadians and Nature: Fertilizers and Pesticides, 2013



by Environment, Energy and Transportation Statistics Division

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^{p} preliminary
^{r} revised
x suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E} use with caution
F too unreliable to be published
* significantly different from reference category ($p < 0.05$)

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Canadians and Nature: Fertilizers and Pesticides, 2013

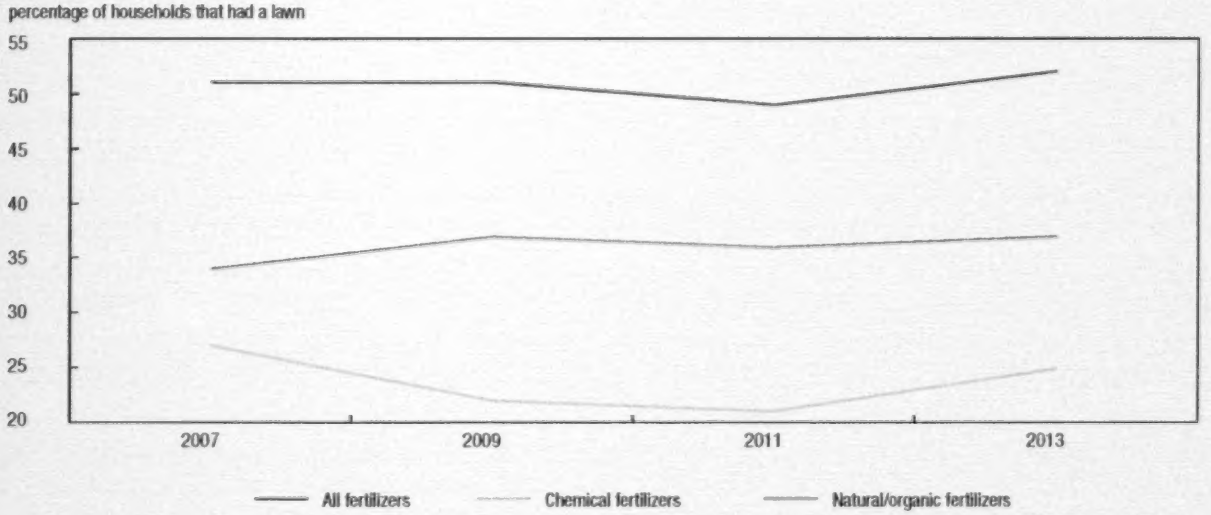
by Environment, Energy and Transportation Statistics Division

Fertilizers and pesticides can help protect plants and help them grow. However they may have unforeseen and undesireable effects on humans, and the ecosystem. In 2013, 59% of Canadian households that had a lawn or garden reported using fertilizers or pesticides, up slightly from 2011 (55%). Households in Saskatchewan were the most likely to have used fertilizers or pesticides in 2013 (75%), while those in New Brunswick were the least likely, with 47% reporting this.

Fertilizer use

While all fertilizers are chemicals in the sense that they provide chemical nutrients to plants, they are often put into one of two groups based on their form. Chemical fertilizers are usually composed of elemental nitrogen,

Chart 1
Fertilizer usage in Canada, 2007 to 2013



Source: Statistics Canada, Environment, Energy and Transportation Statistics Division, CANSIM table 153-0064.

phosphorous and potassium, though other elements may be included. Natural fertilizers are products such as mulch, compost and manure, which release their nutrients as they decompose in the soil.

Slightly more than half (52%) of households that had a lawn or garden reported using fertilizers in 2013, with households in Saskatchewan most likely to have done this (61%). This is a slight increase from 2011 (49%) when households in Manitoba were the most likely to have done this (63%). Natural or organic fertilizers were reported by 37% of households that had a lawn or garden, compared to chemical fertilizers, which were reported by 25% of households.

Households in Quebec were the most likely to have used natural or organic fertilizers (43%), while households in Alberta were most likely to have used chemical fertilizers (47%). Chemical fertilizers were least likely to be reported by households in Quebec, where 11% of households that had a lawn or garden reported their use. Households in Quebec were the most likely to have used natural or organic fertilizers exclusively, with 37% of households that had a lawn or garden doing this.

Nationally, three-quarters of households that applied any type of fertilizer had them applied by a member of the household, with 95% of households in Prince Edward Island reporting this.

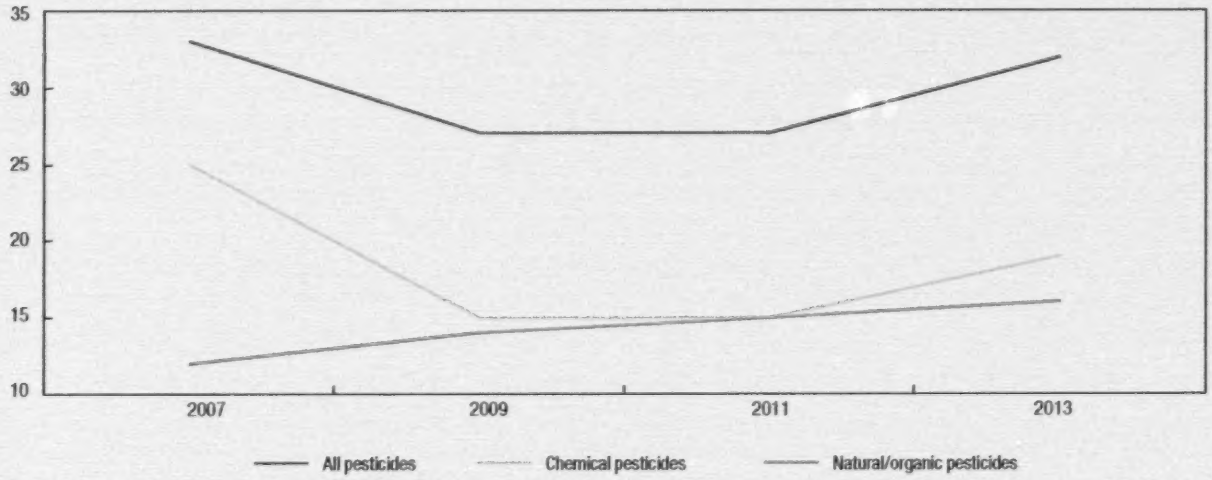
The application of fertilizers by a lawn care company was reported by one-quarter of households that reported having applied fertilizers, with households in Quebec most likely to have used one (33%). Households in Saskatchewan (11%[E]) were the least likely to have done this.

Pesticide use

Pesticide is a general term to describe any product, whether "natural" or "chemical", used to control or eliminate pests. Common types of pesticides include insecticides (insects), herbicides (plants and weeds), and fungicides (fungi). Chemical pesticides are synthetic products that are very effective, but also have had some serious environmental impacts associated with their use.[1]

Chart 2
Pesticide usage in Canada, 2007 to 2013

percentage of households that had a lawn



Source: Statistics Canada, Environment, Energy and Transportation Statistics Division, CANSIM table 153-0064.

1. Environment Canada, 2001, *Threats to sources of drinking water and aquatic ecosystem health in Canada*, (NWRI Scientific Assessment Report Series, ISSN 1499-5905; no. 1).

For example, dichloro-diphenyl-trichloroethane (DDT) was once the most commonly used pesticide in North America, with more than 1 billion kilograms having been used by the 1970s.[2] In addition to killing insects, it was particularly harmful to birds, especially the peregrine falcon and the double-crested cormorant, causing thinner egg shells resulting in declines in the populations of these birds.[3] Natural pesticides such as certain botanicals, sulfur and arsenic have been used by humans for thousands of years, but today beneficial nematodes, which are usually microscopic roundworms that can be applied to control caterpillars or grubs, are a common alternative to chemical pesticides.[4]

Pesticide use was reported by 32% of households that had a lawn or garden, an increase from 27% in 2011. Households in Saskatchewan were the most likely to have reported their use (52%), while those in Prince Edward Island and New Brunswick were the least likely with 19% of households that had a lawn or garden using them in 2013. In 2011, households in Manitoba were most likely to have applied pesticides to their lawn or garden (58%). Households in the Prairie provinces had higher rates of pesticide use than the national average (44%, 52% and 44% for Manitoba, Saskatchewan and Alberta, respectively).

Chemical, and natural or organic pesticides were reported at similar rates (19% and 16% for chemical, and natural or organic pesticides, respectively). Households in Saskatchewan were five times as likely as households in Quebec to have used chemical pesticides (45% compared to 9%, respectively). In Quebec the use of chemical pesticides for cosmetic purposes has been banned (see *"Pesticide bans in Canada"* text box). In general, provinces that have bans on the use of chemical pesticides had usage rates below the national average (e.g., Prince Edward Island (7%[E]), Nova Scotia (14%), New Brunswick (11%), Quebec (9%), and Ontario (16%)).

Just over three-quarters (76%) of households that used chemical pesticides used herbicides, 27% used insecticides and 4% used fungicides.

The type of chemical pesticide used varied by region. Of the households that used chemical pesticides in 2013, insecticide usage was most commonly reported by households in Atlantic Canada (Nova Scotia (47%), New Brunswick (45%), Quebec (45%), and Newfoundland and Labrador (44%[E])), which contrasts with the Prairie provinces where chemical herbicides were much more likely to have been used by households that applied chemical pesticides (87%, 93% and 83% in Manitoba, Saskatchewan and Alberta, respectively).

Pesticide bans in Canada

The number of bans against the use of "cosmetic" pesticides in Canada has grown over the last decade. As of April 2015, seven provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario and Alberta) had legislation banning the use of some or all chemical pesticides. As well, Manitoba has legislation that came into effect in January 2015 allowing the sale of only federally approved bio-pesticides.[1] Some of the legislations allow for the use of chemical pesticides under certain circumstances, such as when they are applied by a licensed lawncare company. Generally speaking, homeowners in jurisdictions with a ban are left with the option of natural and organic pesticides, such as beneficial nematodes, to address their pest problems.

1. Government of Manitoba news release: http://news.gov.mb.ca/news/index.html?item=30526 (accessed 20 May 2015).

2. Environment Canada, n.d., *Earth Tones: DDT - Dichloro-diphenyl-trichloroethane*, http://www.science.gc.ca/default.asp?lang=e&n=730d78b4-1 (accessed 20 May 2015).
3. *Ibid.*
4. University of California, 2009, *The UC Guide to Healthy Lawns: Beneficial nematodes*, http://www.ipm.ucdavis.edu/TOOLS/TURF/PESTS/innem.html (accessed 20 May 2015).

About the Households and the Environment Survey

The Households and the Environment Survey asks Canadian households about their activities and behaviours with respect to the environment. It covers a wide variety of topics including water and energy consumption and conservation, hazardous products used in the home, and the household's interactions with nature. Data from the survey are used by governments to guide policies and programs, by researchers to learn more about Canadians and by individuals to see how they compare to the rest of the country.

The target population of the 2013 Households and the Environment Survey consisted of households in Canada, excluding households located in Yukon, Northwest Territories and Nunavut, households located on Indian Reserves or Crown lands, and households consisting entirely of full-time members of the Canadian Armed Forces. Institutions and households in certain remote regions were also excluded.

Definitions, data sources and methods: survey number 3881.

Available in CANSIM: table 153-0064.

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